

US006773594B1

(12) United States Patent van der Wijngaart

(10) Patent No.:

US 6,773,594 B1

(45) Date of Patent:

Aug. 10, 2004

(54) WASTE-WATER PURIFICATION IN CATTLE-BREEDING SYSTEMS

(75) Inventor: Adriaan Johannes Hubertus van der Wijngaart, Kapelstraat 40, Prinsenbeek

(NL), 4841 GJ

(73) Assignee: Adriaan Johannes Hubertus van der

Wijngaart, Prinsenbeek (NL)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 10/088,579

(22) PCT Filed: Sep. 20, 2000

(86) PCT No.: PCT/NL00/00669

§ 371 (c)(1),

(2), (4) Date: Aug. 5, 2002

(87) PCT Pub. No.: WO01/20976

PCT Pub. Date: Mar. 29, 2001

(30) Foreign Application Priority Data

Sep.	20, 1999	(NL)	1013097
(51)	Int. Cl.7		C02F 3/30
(52)	U.S. Cl.	••••••	210/605; 210/622; 210/623;
			210/195.2; 210/259; 435/262.5
		~ .	

(56) References Cited

U.S. PATENT DOCUMENTS

3,982,499 A	9/1976	Frankl
4,121,539 A	10/1978	Moore
4,749,494 A	6/1988	Tomoyasu et al.
5,401,400 A	* 3/1995	Tonelli et al 210/151
5,558,774 A	* 9/1996	Tonelli et al 210/612
5,833,856 A	11/1998	Liu et al.

FOREIGN PATENT DOCUMENTS

DE	3049302	8/1982
EP	0 498 084 A1	8/1992
EP	0 850 561 A1	7/1998
NL .	8901220	12/1990
NL '	9200763	11/1992

^{*} cited by examiner

Primary Examiner—Fred G. Prince (74) Attorney, Agent, or Firm—Merchant & Gould, P.C.

(57) ABSTRACT

The invention relates to an integrated stock farming system, comprising at least a stable for keeping cattle, wherein means are present for substantially preventing the formation of ammonia through contact of solid manure and urine by separation into a solid and a liquid phase, which system further comprises means for at least partly reprocessing the solid and/or the liquid phase into useful products.

23 Claims, 4 Drawing Sheets

